

AMENDMENTS TO THE CLAIMS

IN THE CLAIMS

1. (Currently Amended) A method of detecting mild impaired glucose tolerance or an insulin secretory defect in a subject, wherein the method comprises:

providing urine samples from a subject, wherein the samples are obtained before and after glucose load, or before and after a meal;

quantitatively determining the myo-inositol level in the samples; and

determining that the subject has mild impaired glucose tolerance or that the subject has an insulin secretory defect based on the concentration of myo-inositol in the samples,

wherein a concentration of myo-inositol at characteristic values or higher than characteristic values of 0 to 20 μ g myo-inositol per mg creatinine when measured as an increasing amount of myo-inositol excreted in the urine after 75g glucose load indicates the subject has mild impaired glucose tolerance or the subject has an insulin secretory defect.

2. (Original) The method according to claim 1, wherein the quantitative determination of myo-inositol level in the sample is carried out using an enzyme.

3. (Original) The method according to claim 2, wherein the enzyme is myo-inositol dehydrogenase.

4. (Original) The method according to claim 2 or 3, wherein the quantitative determination of the myo-inositol level using the enzyme is carried out by an enzymatic cycling method.

5. (Previously Presented) The method according to claim 1 or 2, wherein the myo-inositol level is quantitatively determined after elimination of sugars other than myo-inositol in the sample.

6. (Previously Presented) The method according to claim 5, wherein two kinds of kinases are simultaneously used for the reaction of eliminating sugars other than myo-inositol in the sample.

7. (Previously Presented) The quantitative method according to claim 6, wherein said two kinds of kinases are ATP-hexokinase and ADP-hexokinase.

8. (Previously Presented) The quantitative method according to claim 2, wherein thio-NAD is used as a coenzyme at a final concentration of 0.1 mM or more in the reaction of quantitatively determining myo-inositol.

9. (Previously Presented) The quantitative method according to claim 2, wherein thio-NAD is used as a coenzyme at a final concentration of 2 to 10 mM in the reaction of quantitatively determining myo-inositol.

10 – 12. (Canceled)

13. (Previously presented) The method according to claim 1 or 2, wherein the characteristic value is 8 to 12 μg myo-inositol per mg creatinine when measured as an increasing amount of myo-inositol excreted in the urine after 75g glucose load.

14. (Previously Presented) The method according to claim 1 or 2, wherein a glucose level in the sample is quantitatively determined in addition to the myo-inositol level in the sample.

15. - 27. (Canceled)

28. (Previously presented) The method of detecting mild impaired glucose tolerance or insulin secretory defect according to claim 1 or 2, wherein the myo-inositol level is quantitatively determined after glucose in the sample is eliminated by a method comprising:

reacting ATP with glucose in the sample to convert them to ADP and glucose-6-phosphate; and

reacting the thus obtained ADP with glucose in the sample to convert them to AMP and glucose-6-phosphate.

29. (Canceled)

30. (Canceled)

31. (Currently amended) A method of detecting mild impaired glucose tolerance or an insulin secretory defect in a subject, wherein the method comprises:

providing a sample from a subject;

quantitatively determining the myo-inositol level and the glucose level in said sample;

and

determining that the subject has mild impaired glucose tolerance or that the subject has an insulin secretory defect based on the concentration of myo-inositol and glucose in the sample,

wherein concentrations of myo-inositol at characteristic values or higher than characteristic values of 0 to 20 μ g myo-inositol per mg creatinine when measured as an increasing amount of myo-inositol excreted in the urine after 75g glucose load and glucose at characteristic values or higher than characteristic values indicates the subject has mild impaired glucose tolerance or the subject has an insulin secretory defect.

32. (New) The method of claim 31, wherein the characteristic value is 8 to 12 μ g myo-inositol per mg creatinine when measured as an increasing amount of myo-inositol excreted in the urine after 75g glucose load.

33. (New) The method of claim 31 or 32, wherein the quantitative determination of myo-inositol level in the sample is carried out using an enzyme.